

1998 National Summary of Public Water Systems Compliance

INTRODUCTION

1998's National Public Water Systems Compliance Report describes how the Environmental Protection Agency (EPA) and its State partners are meeting the goal of ensuring that Americans receive safe drinking water from public water systems. Limitations in the data we use to measure our success and the steps we are taking to increase its reliability and completeness will also be discussed.

EPA prepares a National Public Water Systems Compliance Report for every calendar year. The report presents an annual summary of violations at the nation's public water systems. The report also summarizes and evaluates annual reports prepared by the States.¹

Public Water Systems

A Public Water System (PWS) is a system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen service connections or regularly serves at least twenty-five individuals at least 60 days out of the year. A public water system can be one of three types:

- **Community Systems (CWS)** serve at least 15 service connections or 25 people year-round in their primary residences.
- **Non-transient Non-community Systems (NTNCWS)** serve at least 25 of the same persons over six months per year (e.g., schools or factories that have their own water source).
- **Transient Non-community Systems (TNCWS)** serve at least 25 persons (but not the same 25) over six months per year (e.g., campgrounds or highway rest stops that have their own water source).

The first part of this report draws from SDWIS/FED, EPA's national database, to provide a national picture of the maximum contaminant level, treatment technique, significant monitoring and reporting, and variance/exemption violations the States reported to EPA for 1998. EPA calculated rates of compliance after aggregating all reported violations at public water systems in States, Commonwealths, Territories and on Indian reservations.

The second part of this report presents information on public water systems on Indian reservations.

A glossary of terms used in this report appears in Appendix A.

Summaries and evaluations of the States' annual public water systems reports for 1998 are presented in Appendix B.

PWS COMPLIANCE

This report uses information from the Safe Drinking Water Information System/Federal System, SDWIS/FED. SDWIS/FED is the national database where EPA records information the States are required to report about their public water systems. For the national public water system compliance reports, EPA examines SDWIS/FED records of violations of regulations that specify: 1) safe levels (Maximum Contaminant Levels or MCLs) for contaminants in drinking water, 2) techniques for treating water to make it safe, and 3) monitoring and reporting requirements (how and when water must be tested and the results reported).

A recent EPA study showed that the data in SDWIS/FED (particularly those related to the number of public water systems, their size, and their type) are generally accurate. However, the study also revealed that many States did not report some apparent violations — either to their

¹ The term "State" includes 56 States, Commonwealths, and Territories. All but Wyoming and the District of Columbia have federal approval to implement the drinking water program within their jurisdictions. Federal approval to implement the drinking water program is called primary enforcement authority, or "primacy." In Wyoming, the District of Columbia, and on Indian reservations, EPA implements the drinking water program and is responsible for reporting violations to SDWIS/FED.

How Does The Public Find Out If Its Drinking Water Is Safe?

Information Sent to Customers:

Consumer Confidence Report — Every community water system is required to send its customers (each service connection) a yearly report identifying the contaminants detected in its water and the risks of exposure to those contaminants.

Public Notification Rule — Public water systems must notify their customers if there has been a violation of drinking water standards.

Information on the Internet:

Safewater Web Site (<http://www.epa.gov/safewater>) — provides information on the Safe Drinking Water Act, individual water systems, contaminants that may be in drinking water, and things individuals can do to help protect sources of their drinking water.

Additional Information:

Call the community water system — Billing statements should provide a number to call with questions.

State Public Water Systems Compliance Report — Each State's annual report discusses the violations at its public water systems. Most include a list of violating facilities.

National Public Water Systems Compliance Report (this report) — summarizes all reported violations at America's public water systems.

Safe Drinking Water Hotline (1-800-426-4791) — answers questions about drinking water, lets callers order documents from EPA, and can refer callers to EPA experts if they need more information.

Envirofacts Web Site (<http://www.epa.gov/enviro>) — allows the public to access EPA databases containing information on environmental activities that may affect air, water, and land anywhere in the United States.

own data systems or to EPA's SDWIS/FED. Until EPA has completed further analysis, the Agency cannot determine how many of these were actual violations that should have been reported and how many were appropriately left out of the database. Therefore, in recognition of ongoing data reliability efforts, this 1998 report offers broad national findings rather than detailed analysis.

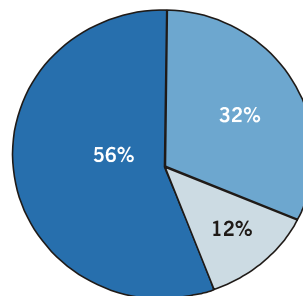
Discussions of data quality concerns and EPA's recommendations appear later in this report.

FINDINGS

In 1998, 168,690 public water systems together served 275 million users. The actual number of individuals served was smaller, because millions of Americans drank water from, and were counted as users of, more than one public water system during the course of the year.

- 54,150 community water systems served more than 252 million people in their primary residences.
- 20,229 non-transient non-community systems (schools, factories) served more than 6 million people in places they frequented.

Percentage of Systems by Type



■ CWS ■ NTNCWS ■ TNCWS

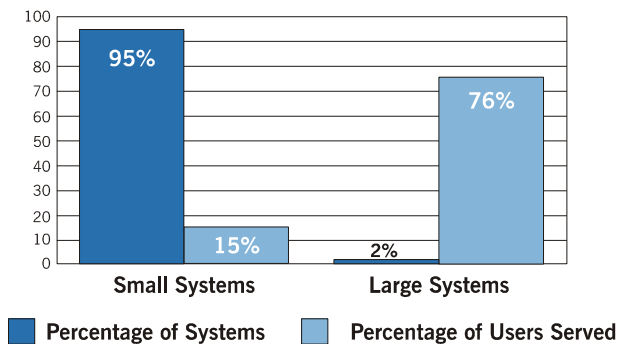
- 94,311 transient non-community systems (campgrounds, highway rest stops) served a constantly changing audience of almost 17 million people.

Most public water systems were small, but large systems served a majority of the people who drank water from a public water system.

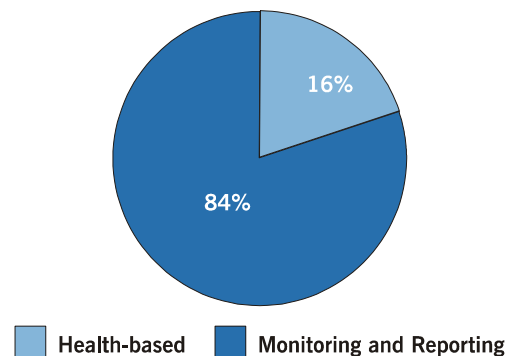
- 160,400 (95%) of America's public water systems (including nearly all of the transient non-community systems) each served 3,300 or fewer people.

- 3,700 (2%) of America's public water systems each served more than 10,000 people.

Size vs. Users Served



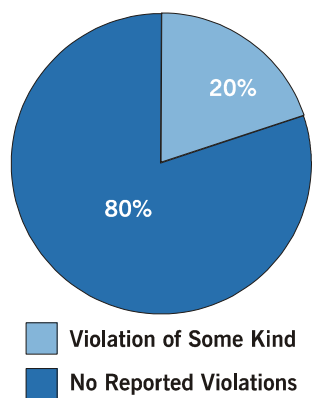
Type of Violation



- If a system did not monitor the quality of its water, it is impossible to know if it violated a health-based requirement.

SDWIS/FED recorded no violations for most of America's public water systems.

PWS with Violations

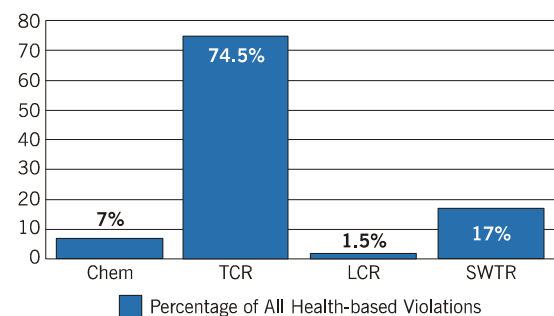


The vast majority of the 102,437 violations the States reported to SDWIS/FED in 1998 were for a public water system's significant failure to monitor and report, rather than health-based MCL or treatment technique violations detected and reported by a system.

94% of America's public water systems reported no violations of a health-based drinking water standard in 1998.

- SDWIS/FED recorded 16,270 health-based violations in 1998. The MCL for the Total Coliform Rule (TCR), which must be met by all types and sizes of public water systems, was the health-based standard most frequently violated.²

Percentage of Health-based Violations by Rule



² For the annual compliance reports, EPA tracks violations of the contaminant rules in four categories: 1) Chem — violations of rules for organic, inorganic (except for lead and copper), and radioactive contaminants — compliance with many organic and inorganic standards is determined on the basis of shared samples, with one missed sample resulting in a monitoring and reporting violation of many standards; 2) total coliform (TCR); 3) lead and copper (LCR); and 4) surface water treatment (SWTR). Coliform bacteria are usually not a threat to humans, but their presence in drinking water can indicate a lapse in treatment and the possible presence of other, more dangerous, microbes.

No violations of variances or exemptions were reported to SDWIS/FED during 1998.

- Under Federal law, States can grant variances or exemptions to public water systems in limited circumstances allowing them to install alternative technology or giving them more time to meet a standard if public health is adequately protected in the interim. In 1998, few public water systems were operating under a variance or exemption, and only 8 new variances or exemptions were granted.

EPA and its State partners continue to take enforcement actions against violators.³

- In 1998, the States issued a total of 1,468 formal enforcement actions, including 1,007 administrative orders without penalty, 399 administrative orders with penalty, and 62 civil referrals.
- During the same period, EPA issued 242 Federal administrative orders, 7 referrals for civil judicial action, and 8 consent orders with penalties.

DATA QUALITY

The data used in this report came from EPA's national SDWIS/FED database. SDWIS/FED is composed of data that States are required to submit to SDWIS/FED each quarter. EPA uses information in SDWIS/FED to assess progress in the implementation of regulations, to develop national enforcement and compliance priorities, and to provide information to the public.

EPA periodically conducts data verifications (independent, on-site audits) of State drinking water programs to ensure that the State is determining compliance in accordance with Federal regulations. Data verifications help detect differences between data in a State's files (whether electronic or hard copy), and data in SDWIS/FED.

As part of the ongoing data reliability efforts described in the 1997 National Public Water

Systems Compliance Report, EPA recently examined the results of data verifications conducted from 1996 through 1998. Those audits, which covered 27 States (including one where EPA itself administers the drinking water program) and one territory, analyzed data from almost 1,800 public water systems. The data audits reviewed inventory information (identifying systems, their number, their size, and their type), apparent violations that either were reported or should have been reported, and any enforcement actions initiated.

EPA's review showed that the information the States reported to SDWIS/FED is generally very accurate. The review also showed, however, that many States did not report all of the apparent violations at their systems. EPA's analysis of the data verifications found:

- 96% of all inventory data in SDWIS/FED was accurate and complete.
- Information in EPA's database regarding the reported MCL violations was 97% accurate.
- 55% of the apparent MCL violations had been reported to SDWIS/FED.
- Only 10% of apparent monitoring and reporting violations had been reported to SDWIS/FED.
- SDWIS/FED contained accurate and complete information on 72% of the enforcement actions found in the States' records.

EPA is investigating the cause of these omissions. Some appear to have been caused by errors in data entry or data transmission, but most seem to have resulted from a State's differing interpretation of what the regulation required. EPA found no information suggesting that these apparent discrepancies resulted in negative health effects. Further review is necessary to determine how many of the unreported violations were in fact violations — and if they were violations, whether the implementing authority and the public water system took appropriate action to address the violation, but then failed to document their activities.

³ There can be a difference between the number of violations and the number of follow-up formal enforcement actions to those violations. A violation discovered at the end of one year may not be formally addressed until the next year. States may choose to address some violations informally and return systems to compliance before EPA guidelines would require initiation of a formal enforcement response. Also, it is not uncommon for one system to have multiple violations — all of which would be addressed with a single enforcement action.

EPA and its State partners are committed to resolving any problems that may have produced data discrepancies and to ensuring that complete and accurate documentation is available to help assess the safety of our nation's drinking water.

EVALUATION AND SUMMARY OF STATE REPORTS

Appendix B of this report shows that in 1998 EPA received State Public Water System Compliance Reports from 51 of the 54 primacy States, Commonwealths, and Territories. As in past years, American Samoa, Guam, and Northern Mariana did not submit reports, and, with limited exceptions, did not supply information to SDWIS/FED. Appendix B supplies what information is available in SDWIS/FED to indicate violations at public water systems in those territories.

Because the District of Columbia, Wyoming, and Indian Tribes do not have primary enforcement responsibility for drinking water, EPA prepared reports for those jurisdictions.

An evaluation of these annual reports is found in three subsections:

- enforcement and compliance assistance programs;
- information on and evaluation of the State reports; and
- State-by-State summaries.

ENFORCEMENT AND COMPLIANCE ASSISTANCE PROGRAMS

States (and EPA, where it is the primary enforcement authority) engage in a variety of activities to help PWSs remain in and return to compliance, including formal enforcement actions, informal actions, and compliance and technical assistance. State and EPA compliance assistance efforts may include:

- conducting on-site visits and sanitary surveys at PWSs (i.e., an on-site review of the water sources, facilities, equipment, operations, and maintenance to evaluate their adequacy in producing and distributing safe drinking water);

- helping systems invest in preventive measures;
- providing financial assistance for system improvements through the Drinking Water State Revolving Fund and other State funding programs;
- reviewing water system plans and specifications;
- conducting training sessions;
- holding public information meetings;
- lending specialized monitoring equipment; and
- publishing informational bulletins and newsletters on training events, and other educational opportunities.

When a drinking water violation is detected, EPA guidelines require a response from the primacy agency. Acceptable responses include a variety of formal and informal actions as the State or EPA attempts to return a violating public water system to compliance as quickly as possible.

Generally, the primacy agency's first responses to violations are informal actions, such as:

- reminder letters;
- warning letters;
- notices of violation;
- field visits; and
- telephone calls.

If the violation continues or recurs, the primacy agency must initiate a formal enforcement response that requires the violating public water system to return to compliance. Formal enforcement responses include:

- citations;
- administrative orders with or without penalties;
- civil referrals to State Attorneys General or to the Department of Justice;
- other sanctions such as denying permission for system expansion; and
- filing criminal charges.

If a situation poses an imminent risk to public health, EPA and the State will issue an emergency order that requires the public water system to take the steps necessary to protect public health and return the system to compliance.

INFORMATION ON AND EVALUATION OF STATE REPORTS

EPA reviewed each 1998 annual State report to determine if it met the requirements of the 1996 Amendments to SDWA. The contents of the State reports are summarized in Table B-1 in Appendix B. Table B-1 shows whether a State:

- submitted a report to EPA;
- included all required elements;
- satisfied its statutory requirement to publish and distribute summaries of the report that inform the public of the availability of the full report;
- included additional information of interest to the public (such as the number of public water systems in the State, their sizes and types, the size and type of violating systems, and the compliance assistance and enforcement activities the State undertook in response to violations); and
- included a list of PWSs with MCL or treatment technique violations, as EPA recommended in its guidance to States on preparing their reports.

STATE-BY-STATE SUMMARIES

EPA provides a State-by-State summary of information reported in each State report in Appendix B. The standardized format includes an overall summary of the violations data States are required to report in Section 1414 of the 1996 SDWA Amendments (i.e., violations with respect to MCLs, treatment technique violations, significant monitoring and reporting violations, and variances and exemptions). The summary for each State also tells how to obtain a copy of the State's full report.

In some instances, the data reported by a State in July of 1999 may not agree with data currently in SDWIS/FED. EPA's and the States' ongoing

SDWIS/FED data reliability efforts may have resulted in updates and corrections to the data in SDWIS/FED since the State published its report.

CONCLUSIONS AND ACTIVITIES TO ADDRESS RECOMMENDATIONS

Most Americans, by far, received water from systems which reported no violations of health-based standards, and for which the States reported no significant violations of monitoring and reporting requirements.

The data for 1998 indicate that the Total Coliform Rule is the rule most frequently violated. This rule, which applies to all sizes and types of public water systems, was also the most violated rule in 1996 and 1997. In determining how best to direct resources to improve the compliance of public water systems, it is apparent that EPA and the States should focus efforts on reducing violations of the Total Coliform Rule. Beyond that, data completeness issues prevent EPA drawing firm conclusions about the numbers and types of violations.

It is also too soon to evaluate implementation of recommendations made two years ago in the first national public water systems compliance report. These recommendations were incorporated into EPA's enforcement and compliance assurance program planning, for upcoming Fiscal Years 2000 and 2001.

Accordingly, our recommendations are as follows:

States and EPA should continue working together to address significant violations of monitoring and reporting requirements.

States and EPA should continue working together to address violations of MCL and treatment technique requirements.

EPA designated compliance with the SDWA microbial rules (the Total Coliform Rule, and the Surface Water Treatment Rule) as a national priority for its enforcement and compliance assurance program in Fiscal Years 2000 and 2001.

In 2000 and 2001, EPA Regions will be working with States to evaluate how well public water systems, especially large systems, comply with the microbial rules and whether enforcement actions are being initiated when appropriate.

Regions and States will also identify and evaluate microbial risks to watersheds in an attempt to focus enforcement and compliance efforts on ensuring the safety of drinking water sources. Considerable effort will also be devoted to training and compliance assistance. EPA will work to build the capacity of small public water systems and Indian Tribes to maintain compliance both with established rules and with new microbial rules (the Interim Enhanced Surface Water Treatment Rule and the Ground Water Rule).

With respect to the rest of the drinking water program, States and EPA are continuing their efforts to implement the recommendations of the 1996 and 1997 national public water system reports:

- EPA provides funding to support nine technology assistance centers that help small systems with training, technical assistance, and technology demonstrations.
- States and EPA help promote compliance with existing drinking water requirements by conducting numerous assistance activities, such as on-site visits and the development and distribution of easy to read guides and checklists.
- EPA funding established and maintains the new Local Government Environmental Assistance Network (LGEAN), a source of free information on current and developing SDWA requirements (as well as technical assistance, peer counseling, and financial guidance). LGEAN can be accessed on the Internet at www.lgean.org or by calling, toll-free 1-877-TO-LGEAN (865-4326).
- States worked with EPA to ensure community water systems sent consumers the first Annual Consumer Confidence Reports in 1999, allowing the public to monitor the performance of local water systems.
- Revisions to the Public Notification Rule mean that public water systems will soon send their customers more timely notification of drinking water violations.
- EPA is developing a list of approved compliance technologies that will allow small

systems more flexibility in treating drinking water while still providing adequate public health protection.

- The States and EPA are pursuing enforcement actions against violating public water systems both to discourage violations and to level the playing field for systems that devote resources to maintaining compliance.

EPA and drinking water stakeholders should work cooperatively to improve the quality of compliance data.

Since September 1998, the findings and recommendations of the national public water systems reports have been incorporated into EPA's ongoing efforts to ensure the reliability of data in SDWIS/FED. In its first national report, EPA noted that compliance data in many individual state reports differed from the data reported to SDWIS/FED. During Fall 1998, EPA and its stakeholders — through a series of meetings — agreed that our data quality goal should be “100% complete, accurate, and timely data submitted by public water systems and primacy agencies, consistent with SDWA reporting requirements.” Further analysis and discussions among the stakeholders led to establishment of interim milestones for how soon that goal will be achieved. We expect that these milestones will be formally announced in 2000.

EPA and the drinking water stakeholders made significant progress on most of the data recommendations of the earlier national reports — in some instances achieving full implementation. Among the major accomplishments, EPA has:

- improved the display of drinking water data in Envirofacts;
- characterized and quantified the data quality problem;
- taken interim steps to improve data quality; and
- made a long-term commitment to achieve and maintain data quality goals.

More remains to be done to achieve the goal of 100% accurate, complete, and timely

information. Some of the next steps EPA and the drinking water stakeholders have agreed to undertake include:

- streamlining data reporting and reducing rule complexity;
- conducting more training to ensure regulatory staff can accurately determine compliance with drinking water rules and data entry staff can upload complete and accurate data to SDWIS/FED;
- making SDWIS/FED error reports more user friendly and understandable to State drinking water managers;
- performing more frequent data verification audits;
- encouraging States to issue annual reminders to water systems of their compliance monitoring schedules; and
- Providing States with individual, prioritized recommendations for improving their data quality.